

A WING EMPLOYING LEADING EDGE FLAPS AND WINGLETS TO ACHIEVE IMPROVED AERODYNAMIC PERFORMANCE

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ABSTRACT

A wing for use on a supersonic aircraft that includes an inboard section a central section of the wing outboard of the inboard portion, and an outboard section. The outboard section can be a winglet oriented anhedrally relative to a lateral axis of the supersonic aircraft. Leading edge segments on the inboard section, central section and outboard winglet may have mounted thereon leading-edge flaps. These flaps are adjusted by a control system operable to reposition the leading-edge flaps in order to improve the aerodynamic performance of the supersonic aircraft. This winglet promotes sonic boom minimization. Further, the wing tip anhedral allows greater inboard dihedral. This effectively pushes lift aft for sonic boom and control purposes while minimizing the movement of control surfaces.